

Response

Serial No.: 09/383,560

Confirmation No.: 6747

Filed: 26 August 1999

For: CERAMIC DENTAL MILL BLANKS

Page 2 of 6

teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure." M.P.E.P. §706.02(j). Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness.

Oden et al. disclose "a prefabricated core designed for preparations for onlay tooth crowns or inlays in natural teeth. The core is preferably fabricated from a high strength densely sintered ceramic material by copy milling" (Abstract). Oden et al. contemplate that sintering after copy milling is required, by disclosing that "[d]uring this copy milling, the sintering shrinkage *must be considered*" (column 4, lines 65-67, emphasis added). Thus, even though Oden et al. disclose that "[t]he ceramic body can also be presintered before copy milling" (column 5, lines 5-6), a "final sintering" (i.e., after copy milling) (column 5, line 8) is still recited. Moreover, as admitted by the Examiner, "one of ordinary skill in the art would have readily recognized and appreciated that the machining is done prior to full sintering because after final sintering the blank is generally too hard to be machined effectively" (page 2 of Office Action mailed March 20, 2003).

Rostvall '871 discloses "a procedure and device for the abrasive precision machining of a blank made of a material with a high degree of hardness" (page 1, lines 2-3). Rostvall '871 discloses that "[t]he blanks can be made of ceramic powder or granule material, plastics, composites, etc." (page 2, line 23 to page 3, line 1). However, Rostvall '871 is totally silent regarding if or when the blank is sintered.

Rostvall '796 discloses "a procedure for the production by machining of a dental restoration body for use when mending, restoring or building up a tooth or row of teeth, as well as a blank intended for the production of the dental restoration body by machining" (page 1, lines 2-4). "Several ceramic materials have been found to display the characteristics that are advantageous for this application" (page 1, line 12-13). "During the manufacture of the blank of ceramic material, the blank is shaped and its colour is determined by chosen ingredients.

Response

Serial No.: 09/383,560

Confirmation No.: 6747

Filed: 26 August 1999

For: CERAMIC DENTAL MILL BLANKS

Page 3 of 6

Following this, the blank is baked at about 1600°C" (page 6, lines 19-20). However, Rostvall '796 is totally silent regarding sintering or lack of sintering after machining.

Despite the failure of Rostvall '871 and Rostvall '796 to teach or suggest the exclusion of sintering of a ceramic mill blank subsequent to machining, the Examiner urged that Rostvall '871 and Rostvall '796 provide motivation for one of skill in the art to modify Oden et al. by excluding sintering of the ceramic mill blank subsequent to copy milling (e.g., "wherein the crystalline ceramic mill blank is not sintered subsequent to step (a)" as recited in present independent claims 55 and 76). Applicants respectfully traverse the Examiner's assertion.

"A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." M.P.E.P. 2141.03. Applicants respectfully submit that Rostvall '871 and Rostvall '796, when *considered in their entireties*, fail to provide motivation for one of skill in the art to modify Oden et al. by excluding sintering of the ceramic material subsequent to copy milling.

Rostvall '871 recognizes that "[t]he problem of machining new materials with a high degree of hardness and/or toughness has limited the use of such materials. For example, ceramic powders or granules, lightweight metals, plastics and composites are often difficult to machine using conventional techniques" (page 1, lines 7-9). As a solution to the problem, Rostvall '871 discloses "high speed machining" procedures and devices "effective . . . to work ceramics" (e.g., page 2, lines 8-10). In short, Rostvall '871 is directed towards *decreasing the difficulty* of machining materials (e.g., ceramic powders or granules). Applicants respectfully submit that the procedures and devices disclosed by Rostvall '871 provide no motivation for one of skill in the art to modify Oden et al. by excluding sintering of the ceramic material subsequent to copy milling. Applicants respectfully note that modifying Oden et al. (which discloses fabrication of a core from "a high strength densely sintered ceramic material by copy milling," followed by a "final sintering" (Abstract and column 5, line 8)) by excluding sintering of the ceramic material subsequent to copy milling, might lead one of skill in the art to attempt copy milling a fully sintered ceramic material, a modification directed towards *increasing the difficulty*

Response

Serial No.: 09/383,560

Confirmation No.: 6747

Filed: 26 August 1999

For: CERAMIC DENTAL MILL BLANKS

Page 4 of 6

of machining materials. Thus, Applicants respectfully submit that Rostvall '871 in fact teaches away from excluding sintering of ceramic materials subsequent to copy milling.

Similarly, Rostvall '796 recognizes that "the problems with current blanks are: that the hardness of the blank leads to significant wear of the machine tool and prolongs the time required for the machining operation; that the cylindrical shape of the blank leads requires a large amount of rough cutting before the actual shaping can begin; and that cracks tend to form in the material when machining holes or cavities" (page 2, lines 28-32). As a solution to the problem, Rostvall '796 reduces the amount of machining required by disclosing that "[i]n contrast to the cylindrical part of the blank 5, which is standardised, the part intended for machining 7 has a roughly pre-formed geometry for different types of dental restoration bodies" (page 4, lines 6-8). In short, Rostvall '796 is directed towards *decreasing the difficulty* of machining blanks.

Applicants respectfully submit that the blanks disclosed by Rostvall '796 provide no motivation for one of skill in the art to modify Oden et al. by excluding sintering of the ceramic material subsequent to copy milling. Applicants respectfully note that modifying Oden et al. (which discloses fabrication of a core from "a high strength densely sintered ceramic material by copy milling," followed by a "final sintering" (Abstract and column 5, line 8)) by excluding sintering of the ceramic material subsequent to copy milling, might lead one of skill in the art to attempt copy milling a fully sintered ceramic material, a modification directed towards *increasing the difficulty* of machining materials. Thus, Applicants respectfully submit that Rostvall '796 in fact teaches away from excluding sintering of ceramic materials subsequent to copy milling.

Despite the disclosures of Rostvall '871 and Rostvall '796 considered in their entireties, the Examiner asserted that "[t]o have fully sintered the Oden blanks prior to machining in order to eliminate the shrinkage problem and to have machined the high degree of hardness blanks in the manner taught by Rostvall would have been obvious to one of ordinary skill in the art" (sentence spanning pages 2-3 of Office Action mailed March 20, 2003). Applicants respectfully submit that the motivation alleged by the Examiner is based on an improper "obvious to try" argument. *See, for example*, M.P.E.P. §2143.01 ("The mere fact that references

Response

Serial No.: 09/383,560

Confirmation No.: 6747

Filed: 26 August 1999

For: CERAMIC DENTAL MILL BLANKS

Page 5 of 6

can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.").

In view of the remarks presented herein above, Applicants respectfully request that the rejection under 35 U.S.C. §103 be reconsidered and withdrawn.

Information Disclosure Statement

Applicants submitted an Information Disclosure Statement on December 4, 2000.

The 1449 form has not been initialed and returned by the Examiner. Applicants are providing a courtesy copy of the 1449 form herewith. Consideration of each of the documents listed on the attached 1449 form(s) is respectfully requested. Pursuant to the provisions of M.P.E.P. §609, Applicants further request that a copy of the 1449 form(s), marked as being considered and initialed by the Examiner, be returned with the next Official Communication.

Response

Serial No.: 09/383,560

Confirmation No.: 6747

Filed: 26 August 1999

For: CERAMIC DENTAL MILL BLANKS

Page 6 of 6

Summary

It is respectfully submitted that all the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for
Richard P. RUSIN et al.

By

Mueting, Raasch & Gebhardt, P.A.

P.O. Box 581415

Minneapolis, MN 55458-1415

Phone: (612) 305-1220

Facsimile: (612) 305-1228

June 20, 2003

Date

By: 

Loren D. Albin

Reg. No. 37,763

Direct Dial (612)305-1225

CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that this paper is being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Assistant Commissioner for Patents, Washington, D.C. 20231, on this 20th day of June, 2003, at 9:43 a.m. (Central Time).

By: 

Name: Rachel Angliardi-Gibson

OMB No. 0651-0011

[illegible]

Based on Form PTO-FB-A820 (Also form PTO-1449)

Patent and Trademark Office, U.S. Department of Commerce